Exercises for linear algebra
7th February, 2006

1. Find values of the variables x, y and z for each of the following systems of equations, using Gaussian elimination.

$$(i) \quad \begin{cases} 2x - 2y - z &= 3 \\ x - y + z &= 2 \\ x + y + 2z &= 3 \end{cases} \qquad (ii) \quad \begin{cases} 4x + 3y + z &= 5 \\ 2x - y - z &= 4 \\ x + y - z &= 3 \end{cases}$$

$$(iii) \quad \begin{cases} 2x + 2y - 7z &= 10 \\ -x - y &= 5 \\ 3x + 2y + z &= -1 \end{cases} \qquad (iv) \quad \begin{cases} 3x + 2y + z &= 16 \\ x + y + z &= 5 \\ 2x - y - z &= 7 \end{cases}$$